



Title

“Chimie Biologique” PPU-Oxford Program

Linking Chemistry and Microbiology to Fight Human Diseases (LCM-FHD)

Context and objectives

Antimicrobial resistance (AMR) is dramatically increasing worldwide and is becoming one of the most urgent public health threats. There is an urgent need for actions to reverse the curve of AMR expansion and to develop innovative drugs (antibiotics, antiparasites, antifungals, antiviral) and therapeutic strategies for safer and sustainable treatments of infectious diseases. To respond to this urgency, AMR has been declared one of the three priorities of the **Institut Pasteur** Strategic Plan. The Institut Pasteur is an international center of excellence for biomedical research aiming at unravelling the fundamental mechanisms of life, leading to medical applications. The **Department of Organic Chemistry of the University of Oxford** is a world-leading chemistry department carrying out pioneering work, in particular in Chemistry for Biology and Medicine, with a research axis on combating antibiotic resistance. These two high profile and complementary Institutions have decided to join their forces to develop **cutting edge projects at the interface of Chemistry and Biology to better tackle the AMR challenge**.

Aim

The aim of this program is to foster projects to fight AMR and the synergy between the Institut Pasteur and the Oxford Chemistry Department through a **joint PhD program**. PhD students will work on collaborative projects between the two institutions spending up to three months of their PhD in the partner laboratory. The exchange will be particularly attractive for students and will train them to interdisciplinarity.

Scheme

Students will be recruited jointly by the two institutions following international advertising. The PPU-Oxford recruitment will be done in the context of the PPU selection, with the same rules (www.pasteur.fr/en/education/ppu).

Timing: students will spend up to three months of their PhD in the partner's laboratory to gain multidisciplinary expertise.

Ph.D. courses: the students of the University of Oxford will attend the doctoral courses of the Institut Pasteur during their stay and learn about microbiology, infection, cell biology, and public health. Vice versa the Ph.D. students of Institut Pasteur will attend the courses of the Chemical Biology Ph.D. program of the University of Oxford and learn of medicinal chemistry and drug discovery.

The PPU-Oxford students will participate in all the activities proposed by the PPU program (www.pasteur.fr/en/education/ppu).

Impact

The impact is double. On one hand, the development of new chemical agents addressing AMR will enable to have (1) **chemical probes** to better understand the biology underlying AMR and (2) new leads for **therapeutic agents** that are dramatically needed. On the other hand, the students will receive a **unique and renown multidisciplinary training** in Biology of the diseases and in Chemistry for Medicine, providing a strong attractiveness for their profile.